LERF Alarms

ETF Alarm Response Procedure
Effluent Treatment Facility

All Changes Require Review by the following Organizations:

USQ

USQ # EV-18-1604-S, Rev. 0

CHANGE HISTORY (≤ LAST 5 REV-MODS )

<table>
<thead>
<tr>
<th>Rev-Mod</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
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<tr>
<td>A-3</td>
<td>10/03/2018</td>
<td>Changes from Periodic Review incorporated</td>
<td>Removed native file link. Updated records section. Updated identifiers to correct identification.</td>
</tr>
<tr>
<td>A-2</td>
<td>08/22/2018</td>
<td>Operations Request</td>
<td>Added three new alarms (Power Supply, AC, and BAT) and supporting information.</td>
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<tr>
<td>A-1</td>
<td>04/04/2017</td>
<td>USQ Review</td>
<td>USQ number added. Added stamp to top of page.</td>
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<tr>
<td>A-0</td>
<td>10/07/2015</td>
<td>Converting to WRPS Format</td>
<td>New Procedure; Supersedes ETF-PRO-AR-51391 (ARP-60M-001)</td>
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RECORDS

No records are generated during the performance of this procedure.
LCU 17 POWER SUPPLY X ALARM
LCU17\LCU17_PS 1 & 2

Description: POWER SUPPLY FAILURE
Setpoint: Logic Generated Alarm
Alarm Location: See table below
Graphic: Alarm Summary Screen
Indications: N/A

<table>
<thead>
<tr>
<th>ALARM</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCU17\LCU17-PS1</td>
<td>LERF</td>
</tr>
<tr>
<td>LCU17\LCU17-PS2</td>
<td>LERF</td>
</tr>
</tbody>
</table>

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved work activities or procedures.

Automatic Actions:
1. System places backup power supply on-line as the primary power supply and takes failed power supply off-line.

Immediate Actions:
[1] FROM MCS, CHECK alarm JA-6017VAC.
[2] IF JA-6017AC is alarmed, GO TO alarm response for JA-6017VAC (page 4) in this procedure.
[3] FROM LCU, RESPOND to determine status of power supply.

Possible Causes:
1. Primary or secondary 28VDC power supply out of specification.
2. 120 VAC power to LCU lost.

References:
Drawings: None
Documents: None
AC ALRM 6017 120VAC FAIL
JA_6017_VAC

Description: 120 VAC LOST TO LCU, JA_6017VAC
Power has been lost and LCU is running on uninterruptable power supply (UPS).

Setpoint: Logic Generated Alarm

Alarm Location: See table below

Graphic: Alarm Summary Screen

Indications: N/A

<table>
<thead>
<tr>
<th>ALARM</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>JA_6017VAC</td>
<td>LERF</td>
</tr>
</tbody>
</table>

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved work activities or procedures.

Automatic Actions:
NONE.

Immediate Actions:

1. **IF** both LCU17\LCU17_PSx and JA-6017VAC alarms are present, **DO NOT** perform alarm response for LCU17\LCU17_PS1 & 2.
2. **AT** LCU, **RESPOND** to determine status of power supply.
3. **IF** power is lost to LCU only, **CONFIRM** position of circuit breakers:
   - At MCC
   - In bottom of LCU cabinet.
4. **REQUEST** qualified personnel reset breakers when necessary.
5. **IF** power is lost to entire location, or breaker cannot be reset, **INFORM** 242-A Operations of the loss of LCU17 power.

(Continued on Next page)
Description: 120 VAC LOST TO LCU, JA_6017_VAC
Power has been lost and LCU is running on uninterruptable power supply (UPS).

Setpoint: Logic Generated Alarm

Alarm Location: See table page 4

Graphic: Alarm Summary Screen

Indications: N/A

Possible Causes:

1. Circuit breaker to LCU tripped/open.
2. Loss of 120 VAC to LCU.

References:

Drawings: None
Documents: None
BAT ALRM XXX LOW BAT  
JA_6017_VDC

Description: UPS BATTERIES LOW, JA_6017_VDC  
Setpoint: Logic Generated Alarm  
Alarm Location: See table below  
Diagnostic: Alarm Summary Screen  
Indicators: N/A  

<table>
<thead>
<tr>
<th>ALARM</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>JA_6017VDC</td>
<td>LERF</td>
</tr>
</tbody>
</table>

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved work activities or procedures.

Automatic Actions:  
NONE.

Immediate Actions:  
NOTE - For LERF Instrument Building where alarm JA-6017_VDC exists, power to other equipment will also be lost.

[1] PLACE all pumps and valves in MANUAL.

Possible Causes:
1. UPS battery failure.
2. UPS batteries exceeded discharge capacity (20 minutes).

References:
Drawings: None.  
Documents: None.
LEAK DETECTOR ALARM LDA 60M01A

DESCRIPTION: 4-inch Primary Transfer Line Leak
Setpoint: On
Alarm Location: LDE 60M01A
Graphic: LERFMAIN
Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved work activities or procedures.

Automatic Actions:
1. All LERF transfer pumps stop, P-XX-4.

Immediate Actions:

[1] ENSURE STOP for all LERF pumps on graphic BASIN XX.
[2] ENSURE LV-PXX-4-1 CLOSED.
[3] CLOSE the following manual valves for all basins:
   • HV-XX-10
   • HV-XX-8.
[4] TROUBLESHOOT to determine if alarm is due to carrier pipe failure.
[5] IF alarm is due to carrier pipe failure, PERFORM the following:
   [5.2] SHUT DOWN annulus air purge per ETF-01B-001.

NOTE Opening annulus drain valve causes water to enter surge tank sump area.

[6] IF alarm is not due to carrier pipe failure, PERFORM the following:
   [6.1] OPEN annulus drain valve 60M-14G to drain condensate.
   [6.2] WHEN condensate is drained, CLOSE 60M-14G.

(Continued on Next Page)
LEAK DETECTOR ALARM LDA-60M01A

DESCRIPTION: 4-inch Primary Transfer Line Leak
Setpoint: On
Alarm Location: LDE 60M01A
Graphic: LERFMAIN
Indications: N/A

Supplemental Actions:

[8] IF Maintenance support is required to clear leak detector alarm and a transfer through four-inch 60M-002-M17 is needed, **PERFORM** surveillance as follows:

[8.1] IF continuous use of transfer line is occurring, **CONDUCT** visual check once per shift for transfer line leaks by opening 60M-14G.

[8.1.1] **CLOSE** 60M-14G after each check.

[8.2] IF intermittent use of transfer line is occurring, **CONDUCT** visual check once at the beginning and at least once during the transfer for line leaks by opening 60M-14G.

[8.2.1] **CLOSE** 60M-14G after each check.

Possible Causes:

1. Condensate buildup around leak detector element.
2. Pipe degradation resulted in failure.
3. Internal force caused failure.

References:

Drawings: None.
LEAK DETECTOR ALARM LDA 60M01B

DESCRIPTION: 4-inch Primary Transfer Line Leak
Setpoint: On
Alarm Location: LDE 60M01B
Graphic: LERFMAIN
Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Automatic Actions:
1. All LERF transfer pumps stop, P-XX-4.

Immediate Actions:
[1] ENSURE STOP for all LERF pumps on graphic BASIN XX.
[2] ENSURE LV-PXX-4-1 CLOSED.
[3] CLOSE the following manual valves for all basins:
   • HV-XX-10
   • HV-XX-8.
[4] TROUBLESHOOT to determine if alarm is due to carrier pipe failure.
[5] IF alarm is due to carrier pipe failure, PERFORM the following:
   [5.2] SHUT DOWN annulus air purge per ETF-01B-001.
NOTE Opening annulus drain valve causes water to enter surge tank sump area.
[6] IF alarm is not due to carrier pipe failure, PERFORM the following:
   [6.1] OPEN annulus drain valve 60M-14G (to drain secondary containment).
   [6.2] WHEN secondary containment is drained, CLOSE 60M-14G.
[7] ENSURE annulus air purge is operating per ETF-01B-001.
[8] RESET leak detector relay at LERF basin LCU Building.

(Continued on Next Page)
LEAK DETECTOR ALARM LDA 60M01B

DESCRIPTION: 4-inch Primary Transfer Line Leak
Setpoint: On
Alarm Location: LDE 60M01B
Graphic: LERFMAIN
Indications: N/A

Possible Causes:
1. Pipe degradation resulted in failure.
2. Internal force caused failure.

References:
Drawings: None.
Documents: ETF-ERP-85B-003, Emergency Spill or Release at ETF
ETF-01B-001, Compressed Air System Operations.
LEAK DETECTOR ALARM LDA 60M01C

DESCRIPTION: 8-inch Interbasin Transfer Line Leak
Setpoint: On
Alarm Location: LDE 60M01C
Graphic: LERFMAIN
Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Automatic Actions:
1. Stops LERF transfer for all or any pumps P-XX-4.

Immediate Actions:
[1] ENSURE STOP for all LERF pumps on graphic BASIN XX.
[2] ENSURE LV-PXX-4-1 CLOSED.
[3] CLOSE the following manual valves for all basins:
   - HV-XX-10
   - HV-XX-8.
[4] TROUBLESHOOT to determine if alarm is due to carrier pipe failure.
[5] IF alarm is due to carrier pipe failure, PERFORM the following:
   [5.1] FOLLOW spill response procedure ETF-ERP 85B-003.
   [5.2] SHUT DOWN annulus air purge per ETF-01B-001.
NOTE Opening annulus drain valve causes water to enter LERF Catch Basin 44.
[6] IF alarm is not due to carrier pipe failure, PERFORM the following:
   [6.2] WHEN secondary containment is drained, CLOSE HV-44-2.
[7] ENSURE annulus air purge is operating per ETF-01B-001.
[8] RESET leak detector relay at LERF basin LCU Building.

(Continued on Next Page)
LEAK DETECTOR ALARM LDA-60M01C

DESCRIPTION: 8-inch Interbasin Transfer Line Leak
Setpoint: On
Alarm Location: LDE 60M01C
Graphic: LERFMAIN
Indications: N/A

(Continued)

Supplemental Actions:

[9] IF Maintenance support is required to clear leak detector alarm and a transfer through affected section of line is needed, PERFORM surveillance as follows:
[9.1] IF continuous use of transfer line is occurring, CONDUCT visual check once per shift for transfer line leaks by opening HV-44-2.
[9.1.1] CLOSE HV-44-2 after each check.
[9.2] IF intermittent use of transfer line is occurring, CONDUCT visual check once at the beginning and at least once during transfer for line leaks by opening HV-44-2.
[9.2.1] CLOSE HV-44-2 after each check.

Possible Causes:
1. Pipe degradation resulted in failure.
2. Internal force caused failure.

References:
Drawings: None.
Documents: ETF-ERP-85B-003, Emergency Spill or Release at ETF.
ETF-01B-001, Compressed Air System Operations.
LEAK DETECTOR ALARM LDA 60M01D

DESCRIPTION: 8-inch Interbasin Transfer Line Leak
Setpoint: On
Alarm Location: LDE 60M01D
Graphic: LERFMAIN
Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Automatic Actions:
1. Stops LERF transfer for all or any pumps P-XX-4.

Immediate Actions:
[1] ENSURE STOP for all LERF pumps on graphic BASIN XX.
[2] ENSURE LV-PXX-4-1 CLOSED.
[3] CLOSE the following manual valves for all basins:
   • HV-XX-10
   • HV-XX-8.
[4] TROUBLESHOOT to determine if alarm is due to carrier pipe failure.
[5] IF alarm is due to carrier pipe failure, PERFORM the following:
   [5.2] SHUT DOWN annulus air purge per ETF-01B-001.
NOTE Opening annulus drain valve causes water to enter LERF Catch Basin 44.
[6] IF alarm is not due to carrier pipe failure, PERFORM the following:
[7] ENSURE annulus air purge is operating per ETF-01B-001.
[8] RESET leak detector relay at LERF basin LCU Building.

(Continued on Next Page)
DESCRIPTION: 8-inch Interbasin Transfer Line Leak  
Setpoint: On  
Alarm Location: LDE 60M01D  
Graphic: LERFMAIN  
Indications: N/A  

Supplemental Actions:

[9] IF Maintenance support is required to clear leak detector alarm and a transfer through affected section of line is needed, **PERFORM** surveillance as follows:

[9.1] IF continuous use of transfer line is occurring, **CONDUCT** visual check once per shift for transfer line leaks by opening HV-43-13.

[9.1.1] **CLOSE** HV-43-13 after each check.

[9.2] IF intermittent use of transfer line is occurring, **CONDUCT** visual check once at the beginning and at least once during transfer for line leaks by opening HV-43-13.

[9.2.1] **CLOSE** HV-43-13 after each check.

Possible Causes:

3. Pipe degradation resulted in failure.  
4. Internal force caused failure.

References:

Drawings: None.  
Documents: ETF-ERP-85B-003, Emergency Spill or Release at ETF  
ETF-01B-001, Compressed Air System Operations.
LEAK DETECTOR ALARM LDA-BSN 42

DESCRIPTION: Catch Basin 42 Leak Alarm
Setpoint: On
Alarm Location: LDE 42-1
Graphic: Basin 42
Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Automatic Actions:
1. Stops LERF transfer for all or any pumps P-XX-4.

Immediate Actions:
[1] ENSURE STOP for all LERF pumps on graphic BASIN XX.
[2] ENSURE LV-PXX-4-1 CLOSED.
[3] CLOSE the following manual valves for all basins:
   • HV-XX-10
   • HV-XX-8.
[7] IF strobe light LDI-42-1 is not ON, NOTIFY SOM of possible loss of power to leak detection element LDE-42-1 or alarm circuit feeding LERF PLC and LCU.

(Continued on Next Page)
LEAK DETECTOR ALARM LDA-BSN 42

**DESCRIPTION:** Catch Basin 42 Leak Alarm

**Setpoint:** On

**Alarm Location:** LDE 42-1

**Graphic:** Basin 42

**Indications:** N/A

(Continued)

**Possible Causes:**

1. Catch basin pipe degradation resulted in failure.
2. Internal force caused failure.
3. Leak in Catch Basin 42 piping.
4. Accumulation of rain water in catch basin 42.
5. Failure of Catch Basin 42 drain check valve.
7. Ongoing maintenance PM.
8. Instrument malfunction.

**References:**

**Drawings:** H-2-88766, Sheet 2, P&ID, LERF Basin & ETF Influent Evaporator
H-2-79649, Sheets 1 and 2, INSTM, Leachate Level Det & Wrg Retention Basin
H-2-79653, Sheets 1 and 2, INSTM, UHF/PLC Wiring Diagram

**Documents:** None.
LEAK DETECTOR ALARM LDA-BSN 43

DESCRIPTION: Catch Basin 43 Leak Alarm
Setpoint: On
Alarm Location: LDE 43-1
Graphic: Basin 43
Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Automatic Actions:
1. Stops LERF transfer for all or any pumps P-XX-4.

Immediate Actions:
[1] ENSURE STOP for all LERF pumps on graphic BASIN XX.
[2] ENSURE LV-PXX-4-1 CLOSED.
[3] CLOSE the following manual valves for all basins:
   - HV-XX-10
   - HV-XX-8.
[7] IF strobe light LDI-43-1 is not ON, NOTIFY SOM of possible loss of power to leak detection element LDE-43-1 or alarm circuit feeding LERF PLC and LCU.

(Continued on Next Page)
DESCRIPTION: Catch Basin 43 Leak Alarm
Setpoint: On
Alarm Location: LDE 43-1
Graphic: Basin 43
Indications: N/A

(Possible Causes:

1. Catch basin pipe degradation resulted in failure.
2. Internal force caused failure.
3. Leak in Catch Basin 43 piping.
4. Accumulation of rain water in catch basin 43.
5. Failure of Catch Basin 43 drain check valve.
7. Ongoing maintenance PM.
8. Instrument malfunction.

References:

Drawings: H-2-88766, Sheet 3, P&ID, LERF Basin & ETF Influent Evaporator
H-2-79649, Sheets 1 and 2, INSTM, Leachate Level Det & Wrg Retention Basin
H-2-79653, Sheets 1 and 2, INSTM, UHF/PLC Wiring Diagram

Documents: None.
LEAK DETECTOR ALARM LDA-BSN 44

DESCRIPTION: Catch Basin 44 Leak Alarm

Setpoint: On

Alarm Location: LDE 44-1

Graphic: Basin 44

Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Automatic Actions:

1. Stops LERF transfer for all or any pumps P-XX-4.

Immediate Actions:

[1] ENSURE STOP for all LERF pumps on graphic BASIN XX.
[2] ENSURE LV-PXX-4-1 CLOSED.
[3] CLOSE the following manual valves for all basins:
   • HV-XX-10
   • HV-XX-8.
[5] REQUEST outside operator check leak detection strobe light LDI-44-1 at LERF Catch Basin 44.
[6] IF strobe light LDI-44-1 is ON, NOTIFY SOM of possible leak.
[7] IF strobe light LDI-44-1 is not ON, NOTIFY SOM of possible loss of power to leak detection element LDE 44-1 or alarm circuit feeding LERF PLC and LCU.

(Continued on Next Page)
LEAK DETECTOR ALARM LDA-BSN 44

DESCRIPTION: Catch Basin 44 Leak Alarm
Setpoint: On
Alarm Location: LDE 44-1
Graphic: Basin 44
Indications: N/A

Possible Causes:
1. Catch basin pipe degradation resulted in failure.
2. Internal force caused failure.
3. Leak in Catch Basin 43 piping.
4. Accumulation of rain water in catch basin 44.
5. Failure of Catch Basin 43 drain check valve.
7. Ongoing maintenance PM.
8. Instrument malfunction.

References:
Drawings: H-2-88766, Sheet 4, P&ID, LERF Basin & ETF Influent Evaporator
H-2-79649, Sheets 1 and 2, INSTM, Leachate Level Det & Wrg Retention Basin
H-2-79653, Sheets 1 and 2, INSTM, UHF/PLC Wiring Diagram
Documents: None.
**LEAK DETECTOR ALARM LXA 60M01A**

**DESCRIPTION:** Leak Detector Cable Failure

**Setpoint:** On

**Alarm Location:** LDE 60M01A

**Graphic:** N/A

**Indications:** N/A

**NOTE** - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

### Immediate Actions:

1. **INITIATE** STOP for all LERF pumps on graphic BASIN XX.
2. **ENSURE** LV-PXX-4-1 CLOSED.
3. **CLOSE** the following manual valves for all basins:
   - HV-XX-10
   - HV-XX-8.
4. **TROUBLESHOOT** to determine if alarm is due to carrier pipe failure.
5. **IF** alarm is due to carrier pipe failure, **PERFORM** the following:
   5.1 **FOLLOW** spill response procedure ETF-ERP-85B-003.
   5.2 **SHUT DOWN** annulus air purge per ETF-01B-001.

**NOTE** Opening annulus drain valve causes water to enter surge tank sump area.

6. **IF** alarm is not due to carrier pipe failure, **PERFORM** the following:
   6.1 **OPEN** annulus drain valve 60M-14G to drain condensate.
   6.2 **WHEN** condensate is drained, **CLOSE** 60M-14G.
   6.3 **ENSURE** annulus air purge is operating per ETF-01B-001
   6.4 **RESET** leak detector relay at LERF basin LCU Building.

(Continued on Next Page)
LEAK DETECTOR ALARM LXA 60M01A

DESCRIPTION: Leak Detector Cable Failure
Setpoint: On
Alarm Location: LDE 60M01A
Graphic: N/A
Indications: N/A

(Continued)

Supplemental Actions:
[7] IF Maintenance support is required to clear leak detector alarm and a transfer through four-inch 60M 002 M17 is needed, PERFORM surveillance as follows:
[7.1] IF continuous use of transfer line is occurring, CONDUCT visual check once per shift for transfer line leaks by opening 60M-14G.
[7.1.1] CLOSE 60M-14G after each check.
[7.2] IF intermittent use of transfer line is occurring, CONDUCT visual check once at the beginning and at least once during the transfer for line leaks by opening 60M-14G.
[7.2.1] CLOSE 60M-14G after each check.

Possible Causes:
1. Electrical short caused by moisture or condensation.
2. Failure of circuit by excavation or mishap.
3. Improper alignment of system.

References:
Drawings: None.
Documents: ETF-ERP-85B-003, Emergency Spill or Release at ETF
ETF-01B-001, Compressed Air System Operations.
LEAK DETECTOR ALARM LXA 60M01B

DESCRIPTION: Leak Detector Cable Failure

Setpoint: On

Alarm Location: LDE 60M01B

Graphic: N/A

Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Immediate Actions:

[1] MONITOR leaks from LDE 60M01A.

Possible Causes:

1. Electrical short caused by moisture or condensation.
2. Failure of circuit by excavation or mishap.
3. Improper alignment of system from maintenance activities.

References:

Drawings: None.

Documents: None.
LEAK DETECTOR ALARM LXA 60M01C

DESCRIPTION: Leak Detector Cable Failure
Setpoint: On
Alarm Location: LDE 60M01C
Graphic: N/A
Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Immediate Actions:

[1] INITIATE STOP for all LERF pumps on graphic BASIN XX.
[2] ENSURE LV-PXX-4-1 CLOSED.
[3] CLOSE the following manual valves for all basins:
   • HV-XX-10
   • HV-XX-8.
[4] TROUBLESHOOT to determine if alarm is due to carrier pipe failure.
[5] IF alarm is due to carrier pipe failure, PERFORM the following:
   [5.2] SHUT DOWN annulus air purge per ETF-01B-001.
NOTE Opening annulus drain valve causes water to enter surge tank sump area.
[6] IF alarm is not due to carrier pipe failure, PERFORM the following:
   [6.1] OPEN annulus drain valve HV-44-2 to drain condensate.
   [6.2] WHEN condensate is drained, CLOSE HV-44-2.
   [6.3] ENSURE annulus air purge is operating per ETF-01B-001
   [6.4] RESET leak detector relay at LERF basin LCU Building.

(Continued on Next Page)
LEAK DETECTOR ALARM LXA-60M01C

DESCRIPTION: Leak Detector Cable Failure
Setpoint: On
Alarm Location: LDE 60M01C
Graphic: N/A
Indications: N/A

Supplemental Actions:

[7] IF Maintenance support is required to clear leak detector alarm and a transfer through affected section of line is needed, PERFORM surveillance as follows:

[7.1] IF continuous use of transfer line is occurring, CONDUCT visual check once per shift for transfer line leaks by opening HV-44-2.

[7.1.1] CLOSE HV-44-2 after each check.

[7.2] IF intermittent use of transfer line is occurring, CONDUCT visual check once at the beginning and at least once during the transfer for line leaks by opening HV-44-2.

[7.2.1] CLOSE HV-44-2 after each check.

Possible Causes:

1. Electrical short caused by moisture or condensation.
2. Failure of circuit by excavation or mishap.
3. Improper alignment of system from maintenance activities.

References:

Drawings: None.
LEAK DETECTOR ALARM LXA 60M01D

DESCRIPTION: Leak Detector Cable Failure
Setpoint: On
Alarm Location: LDE 60M01D
Graphic: N/A
Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Immediate Actions:

[1] INITIATE STOP for all LERF pumps on graphic BASIN XX.
[2] ENSURE LV-PXX-4-1 CLOSED.
[3] CLOSE the following manual valves for all basins:
   • HV-XX-10
   • HV-XX-8.
[4] TROUBLESHOOT to determine if alarm is due to carrier pipe failure.
[5] IF alarm is due to carrier pipe failure, PERFORM the following:
   [5.2] SHUT DOWN annulus air purge per ETF-01B-001.

NOTE Opening annulus drain valve causes water to enter surge tank sump area.

[6] IF alarm is not due to carrier pipe failure, PERFORM the following:
   [6.1] OPEN annulus drain valve HV-44-2 to drain condensate.
   [6.2] WHEN condensate is drained, CLOSE HV-44-2.
   [6.3] ENSURE annulus air purge is operating per ETF-01B-001
   [6.4] RESET leak detector relay at LERF basin LCU Building.

(Continued on Next Page)
LEAK DETECTOR ALARM LXA-60M01D

DESCRIPTION: Leak Detector Cable Failure
Setpoint: On
Alarm Location: LDE 60M01D
Graphic: N/A
Indications: N/A

Supplemental Actions:

[7] IF Maintenance support is required to clear leak detector alarm and a transfer through affected section of line is needed, PERFORM surveillance as follows:

[7.1] IF continuous use of transfer line is occurring, CONDUCT visual check once per shift for transfer line leaks by opening HV-43-13.

[7.1.1] CLOSE HV-43-13 after each check.

[7.2] IF intermittent use of transfer line is occurring, CONDUCT visual check once at the beginning and at least once during the transfer for line leaks by opening HV-43-13.

[7.2.1] CLOSE HV-43-13 after each check.

Possible Causes:

1. Electrical short caused by moisture or condensation.
2. Failure of circuit by excavation or mishap.
3. Improper alignment of system from maintenance activities.

References:

Drawings: None.
Documents: ETF-ERP-85B-003, Emergency Spill or Release at ETF
ETF-01B-001, Compressed Air System Operations.
LOW FLOW ALARM FAL P42-4-1

DESCRIPTION: Low Flow Alarm for Basin 42 Transfer Pumps
Setpoint: On
Alarm Location: FSL-P42-4-1
Graphic: Basin 42
Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Automatic Actions:
1. If flow switch FSL-P42-4-1 is not bypassed, then LERF transfer pump P-42-4 is stopped.
2. If flow switch FSL-P42-4-1 is bypassed, then no automatic action.

Immediate Actions:
[1] TRANSFER to surge per the following steps:
[1.1] IF FSL-P42-4-1 is not bypassed, PERFORM the following:
[1.1.1] CONFIRM, on Basin 42 graphic display, that flow as seen on FT60A002 or FT60A003 is dropping to zero.
[1.1.2] CONFIRM, on Basin 42 group display, YS_P42_4_1 LERF BSN PMP CONF is not in ON position.
[1.1.3] CONFIRM, on Basin 42 graphic display, Basin 42 Pump (HSP42_4_3) is in STOP position.
[1.1.4] CONFIRM, on Basin 42 graphic display, LV-P-42-4-1 goes to CLOSED position.
[1.1.5] CONFIRM, on Basin 42 group display, flow switch alarm FAL P42-4-1 is not in ON position.
[1.1.6] CONFIRM valve lineup for Basin 42 to ETF is correct per ETF-60M-003.
[1.1.7] IF flow switch is in OFF position, ATTEMPT one restart LERF transfer pump for Basin 42 (HSP42_4_3).

(Continued on Next Page)
LOW FLOW ALARM FAL P42-4-1

DESCRIPTION: Low Flow Alarm for Basin 42 Transfer Pumps
Setpoint: On
Alarm Location: FSL-P42-4-1
Graphic: Basin 42
Indications: N/A

Immediate Actions (Cont.):

[1.2] IF flow switch FSL-P42-4-1 is bypassed, PERFORM the following:
  [1.2.1] CONFIRM, on Basin 42 graphic display, that flow as seen on FT60A002 or FT60A003 is greater than 55 gpm.
  [1.2.2] CONFIRM, on Basin 42 graphic display, that Basin 42 Pump (HSP42_4_3) is in ON position.
  [1.2.3] CONFIRM, on Basin 42 graphic display, that LV-P42-4-1 is OPEN.

[1.3] IF transferring to another basin or recirculation, PERFORM the following steps:
  [1.3.1] IF FSL-P42-4-1 is not bypassed, PERFORM steps [1.1.2] through [1.1.7].
  [1.3.2] IF flow switch FSL-P42-4-1 is bypassed, PERFORM the following:
    [1.3.2.1] PERFORM steps [1.2.2] and [1.2.3].
    [1.3.2.2] MONITOR PI-42-1 and II P42-4-1.

Possible Causes:

1. Loading on influent filter.
2. Pump/level control valve failure.
3. Valve misalignment.

References:

Drawings: None.
Documents: ETF-60M-003, LERF to ETF Transfers.
LOW FLOW ALARM FAL P43-4-1

DESCRIPTION: Low Flow Alarm for Basin 43 Transfer Pumps

Setpoint: On

Alarm Location: FSL-P43-4-1

Graphic: Basin 43

Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Automatic Actions:

1. If flow switch FSL-P43-4-1 is not bypassed, then LERF transfer pump P-43-4 is stopped.
2. If flow switch FSL-P43-4-1 is bypassed, then no automatic action.

Immediate Actions:

[1] IF transferring to surge, PERFORM the following steps:

[1.1] IF FSL-P43-4-1 is not bypassed, PERFORM the following:

[1.1.1] CONFIRM, on Basin 43 graphic display, that flow as seen on FT60A002 or FT60A003 is dropping to zero.

[1.1.2] CONFIRM, on Basin 43 group display, YS_P43_4_1 LERF BSN PMP CONF is not in ON position.

[1.1.3] CONFIRM, on Basin 43 graphic display, Basin 43 Pump (HS-P43_4_3) is in STOP position.

[1.1.4] CONFIRM, on Basin 43 graphic display, LV-P-43-4-1 goes to CLOSED position.

[1.1.5] CONFIRM, on Basin 43 graphic display, flow switch alarm FAL-P43-4-1 is not in ON position.

[1.1.6] CONFIRM valve lineup for Basin 43 to ETF is correct per ETF-60M-003.

[1.1.7] IF flow switch is in OFF position, ATTEMPT one restart LERF Basin 43 transfer pump (HS_P43_4_3).

(Continued on Next Page)
LOW FLOW ALARM FAL P43-4-1

DESCRIPTION: Low Flow Alarm for Basin 43 Transfer Pumps
Setpoint: On
Alarm Location: FSL-P43-4-1
Graphic: Basin 43
Indications: N/A

Immediate Actions (Cont.):

[1.2] IF flow switch FSL-P43-4-1 is bypassed, PERFORM the following:
  [1.2.1] CONFIRM, on Basin 43 graphic display, that flow as seen on FTI60A002 or FTI60A003 is greater than 55 gpm.
  [1.2.2] CONFIRM, on Basin 43 graphic display, that Basin 43 Pump (HA_P43_4_3) is in ON position.
  [1.2.3] CONFIRM, on Basin 43 graphic display, that LV-P43-4-1 is OPEN.

[1.3] IF transferring to another basin or recirculation, PERFORM the following steps:
[1.3.1] IF FSL-P43-4-1 is not bypassed, PERFORM steps [1.1.2] through [1.1.7].

[1.3.2] IF flow switch FSL-P43-4-1 is bypassed, PERFORM the following:
  [1.3.2.1] PERFORM steps [1.2.2] and [1.2.3].
  [1.3.2.2] MONITOR PI-43-1 and II P43-4-1.

Possible Causes:
1. Pump/level control valve failure.
2. Valve misalignment.
3. Filter loading.

References:
Drawings: None.
Documents: ETF-60M-003, LERF to ETF Transfers.
LOW FLOW ALARM FAL P44-4-1

DESCRIPTION: Low Flow Alarm for Basin 44 Transfer Pumps
Setpoint: On
Alarm Location: FSL-P44-4-1
Graphic: Basin 44
Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Automatic Actions:
1. If flow switch FSL-P44-4-1 is not bypassed, then LERF transfer pump P-44-4 is stopped.
2. If flow switch FSL-P44-4-1 is bypassed, then no automatic action.

Immediate Actions:

[1] IF transferring to surge, PERFORM the following steps:

[1.1] IF FSL-P44-4-1 is not bypassed, PERFORM the following:

[1.1.1] CONFIRM, on Basin 44 graphic display, that flow as seen on FT60A002 or FT60A003 is dropping to zero.

[1.1.2] CONFIRM, on Basin 44 group display, YS_P44_4_1 LERF BSN PMP CONF is not in ON position.

[1.1.3] CONFIRM, on Basin 44 graphic display, Basin 44 Pump (HS_P44_4_3) is in STOP position.

[1.1.4] CONFIRM, on Basin 44 graphic display, LV-P-44-4-1 goes to CLOSED position.

[1.1.5] CONFIRM, on Basin 44 graphic display, flow switch alarm FAL-P44-4-1 is not in ON position.

[1.1.6] CONFIRM valve lineup for Basin 44 to ETF is correct per ETF-60M-003.

[1.1.7] IF flow switch is in OFF position, ATTEMPT one restart LERF Basin 44 transfer pump (HS_P44_4_3).

(Continued on Next Page)
LOW FLOW ALARM FAL P44-4-1

**DESCRIPTION:** Low Flow Alarm for Basin 44 Transfer Pumps

**Setpoint:** On

**Alarm Location:** FSL-P44-4-1

**Graphic:** Basin 44

**Indications:** N/A

(Continued)

**Immediate Actions (Cont.):**

[1.2] **IF** flow switch FSL-P44-4-1 is bypassed, **PERFORM** the following:

- [1.2.1] **CONFIRM**, on Basin 44 graphic display, that flow as seen on FT60A002 or FT60A003 is greater than 55 gpm.

- [1.2.2] **CONFIRM**, on Basin 44 graphic display, that Basin 44 Pump (HS_P44_4_3) is in ON position.

- [1.2.3] **CONFIRM**, on Basin 44 graphic display, that LV-P44-4-1 is OPEN.

[1.3] **IF** transferring to another basin or recirculation, **PERFORM** the following steps:

- [1.3.1] **IF** FSL-P44-4-1 is not bypassed, **PERFORM** steps [1.1.2] through [1.1.7].

- [1.3.2] **IF** flow switch FSL-P44-4-1 is bypassed, **PERFORM** the following:

  - [1.3.2.1] **PERFORM** steps [1.2.2] and [1.2.3].

  - [1.3.2.2] **MONITOR** PI-44-1 and II P44-4-1.

**Possible Causes:**

1. Pump/level control valve failure.
2. Valve misalignment.
3. Filter loading.

**References:**

- **Drawings:** None.
- **Documents:** ETF-60M-003, LERF to ETF Transfers.
LERF FLOW ALARM LOW (VD17611, VD17620)

DESCRIPTION: LERF Flow Alarm Lo
Setpoint: 55 gpm
Alarm Location: FT-60A-002, FT-60A-003
Graphic: LERF
Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Automatic Actions:
1. LERF transfer pump shuts down (VD 17620) 2 minutes after alarm (VD 17611).

Immediate Actions:
[1] CONFIRM, on basin XX graphic display, that FT60A002 [FT60A003] is at or less than 55 gpm.
[2] CHECK influent filter dP.
[3] ADJUST LV-P-XX-4-1 to increase flow.

Possible Causes:
1. Loading on influent filter.
2. Failure of pump/level control valve.

References:
Drawings: None.
Documents: None.
LERF Alarms

YS-P-42

DESCRIPTION: LERF Leachate Pump 42 Confirm; Basin 42 leachate sump pump has started

Setpoint: High liquid level element in contact with liquid

Alarm Location: LY-42-1

Graphic: N/A

Indications: Equipment status

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Immediate Actions:

NOTE - Alarm is a status indicator for this pump.

[1] NOTIFY outside operator to watch for trends.

[2] NOTIFY SOM.

Possible Causes:

1. Liquid level in Basin 42 sump has reached high liquid level element, possibly as a result of a leak.
2. Ongoing maintenance PM.
3. Instrument malfunction.

References:

Drawings: H-2-88766, Sheet 2, P&ID, LERF Basin & ETF Influent Evaporator
H-2-79649, Sheets 1 and 2, INSTM, Leachate Level Det & Wrg Retention Basin
H-2-79653, Sheets 1 and 2, INSTM, UHF/PLC Wiring Diagram
H-2-99085, Electrical Elementary Diagrams.

Documents: None.
**YS-P-43**

**DESCRIPTION:** LERF Leachate Pump 43 Confirm; Basin 43 leachate sump pump has started

**Setpoint:** High liquid level element in contact with liquid

**Alarm Location:** LY-43-1

**Graphic:** N/A

**Indications:** Equipment status

---

**NOTE** - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

**Immediate Actions:**

NOTE - Alarm is a status indicator for this pump.

[1] NOTIFY outside operator to watch for trends.

[2] NOTIFY SOM.

---

**Possible Causes:**

1. Liquid level in Basin 43 sump has reached high liquid level element, possibly as a result of a leak.
2. Ongoing maintenance PM.
3. Instrument malfunction.

**References:**

Drawings: H-2-88766, Sheet 3, P&ID, LERF Basin & ETF Influent Evaporator

H-2-79649, Sheets 1 and 2, INSTM, Leachate Level Det & Wrg Retention Basin

H-2-79653, Sheets 1 and 2, INSTM, UHF/PLC Wiring Diagram


Documents: None.
**YS-P-44**

**DESCRIPTION:** LERF Leachate Pump 44 Confirm; Basin 44 leachate sump pump has started

**Setpoint:** High liquid level element in contact with liquid

**Alarm Location:** LY-44-1

**Graphic:** N/A

**Indications:** Equipment status

**NOTE** - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

**Immediate Actions:**

NOTE - Alarm is a status indicator for this pump.

[1] NOTIFY outside operator to watch for trends.

[2] NOTIFY SOM.

**Possible Causes:**

1. Liquid level in Basin 44 sump has reached high liquid level element, possibly as a result of a leak.
2. Ongoing maintenance PM.
3. Instrument malfunction.

**References:**

**Drawings:**

- H-2-88766, Sheet 4, P&ID, LERF Basin & ETF Influent Evaporator
- H-2-79649, Sheets 1 and 2, INSTM, Leachate Level Det & Wrg Retention Basin
- H-2-79653, Sheets 1 and 2, INSTM, UHF/PLC Wiring Diagram

**Documents:** None.
# LEAK DETECTED AT BASIN 43 WTP LDA-80W002

**DESCRIPTION:** WTP Transfer Line Leak  
**Setpoint:** On  
**Alarm Location:** LE 80W 002  
**Graphic:** Alarm Summary  
**Indications:** N/A

---

**NOTE** - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

### Automatic Actions:

1. Leak signal is transmitted to 242-A Evaporator.

### Immediate Actions:

1. **STOP** the following transfers:
   - 242-A to LERF Basin 42 Alternate (ETF-60M-002, Data Sheet 2).
   - Load In to Basin 42 via 3-inch line (ETF-59A-001, Data Sheet 4).
2. **TROUBLESHOOT** to determine if alarm is due to carrier pipe failure.
3. **IF** alarm is due to carrier pipe failure, **FOLLOW** spill response procedure ETF-ERP-85B-003.

### Supplemental Actions:

4. **IF** alarm is due to instrument problem and a transfer through affected section of line is needed:
   4.1. **IF** continuous use of transfer line is occurring, **CONDUCT** visual check once per shift for transfer line leaks by opening 80W-016.
   4.1.1. **CLOSE** 80W-016 after each check.

(Continued on Next Page)
LEAK DETECTED AT BASIN 43 WTP LDA-80W002

DESCRIPTION: WTP Transfer Line Leak
Setpoint: On
Alarm Location: LE 80W 002
Graphic: Alarm Summary
Indications: N/A

(Continued)

Supplemental Actions (Cont.):

[4.2] IF intermittent use of transfer line is occurring, CONDUCT visual check once at the beginning and at least once during the transfer for line leaks by opening 80W-016.

[4.2.1] CLOSE 80W-016 after each check.

Possible Causes:

1. Pipe degradation resulted in failure.
2. Internal force caused failure.

References:

Drawings: None.
Documents: ETF-ERP-85B-003, Emergency Spill or Release at ETF
ETF-01B-001, Compressed Air System Operations
ETF-60M-002, Waste Transfers at LERF Basins.
# LEAK DETECTED AT BASIN 44 WTP LDA-80W003

**DESCRIPTION:**  WTP Transfer Line Leak  
**Setpoint:**  On  
**Alarm Location:**  LE-80W-003  
**Graphic:**  Alarm Summary  
**Indications:**  N/A  

---

**NOTE** - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

---

**Immediate Actions:**

1. **STOP** transfer from Load In to Basin 44 via 3-inch line (ETF-59A-001, Data Sheet 3).
2. **TROUBLESHOOT** to determine if alarm is due to carrier pipe failure.
3. **IF** alarm is due to carrier pipe failure, **FOLLOW** spill response procedure ETF-ERP-85B-003.

---

**Supplemental Actions:**

4. **IF** alarm is due to instrument problem and a transfer through affected section of line is needed:
   4.1. **IF** continuous use of transfer line is occurring, **CONDUCT** visual check once per shift for transfer line leaks by opening 80W-020.
      4.1.1. **CLOSE** 80W-020 after each check.
   4.2. **IF** intermittent use of transfer line, **CONDUCT** visual check once at the beginning and at least once during the transfer for line leaks by opening 80W-020.
      4.2.1. **CLOSE** 80W-020 after each check.

(Continued on Next Page)
LEAK DETECTED AT BASIN 44 WTP LDA-80W003

DESCRIPTION: WTP Transfer Line Leak
Setpoint: On
Alarm Location: LE-80W-003
Graphic: Alarm Summary
Indications: N/A

Possible Causes:
1. Pipe degradation resulted in failure.
2. Internal force caused failure.

References:
Drawings: None.
Documents: ETF-ERP-85B-003, Emergency Spill or Release at ETF
ETF-59A-001, Load-In Station Operation.
PC-5000 ENCASEMT CATCH TK LEAK LDA-43-2

DESCRIPTION: PC-5000 Encasement Catch Tank Leak
Setpoint: On
Alarm Location: LDS-43-2
Graphic: Alarm Summary
Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Automatic Actions:
1. Leak signal is transmitted to 242-A Evaporator.

Immediate Actions:
[3] TROUBLESHOOT to determine if alarm is due to carrier pipe failure.

Supplemental Actions:
[5] IF alarm is due to instrument problem and a transfer through affected section of line is needed, PERFORM the following:
  [5.1] IF continuous use of transfer line is occurring, VERIFY once per shift no transfer line leak by either of the following:
    [5.1.1] CONDUCT visual check of sight class FG-60M-001,
    OR
    OPEN 60M-43S and check for water, then CLOSE 60M-43S.
  [5.2] IF intermittent use of transfer line is occurring, VERIFY once at the beginning and at least once during the transfer for line leaks by either of the following:
    [5.2.1] CONDUCT visual check of sight class FG-60M-001,
    OR
    OPEN 60M-43S and check for water, then CLOSE 60M-43S.
(Continued on Next Page)
DESCRIPTION: PC-5000 Encasement Catch Tank Leak
Setpoint: On
Alarm Location: LDS-43-2
Graphic: Alarm Summary
Indications: N/A

Possible Causes:
1. Pipe degradation resulted in failure.
2. Internal force caused failure.
3. Instrument malfunction.

References:
Drawings: None.
Documents: ETF-ERP-85B-003, Emergency Spill or Release at ETF.
PC-5000 ENCASEMT CATCH TK LEAK LXA-43-22

**DESCRIPTION:** PC-5000 Encasement Catch Tank Leak

**Setpoint:** On

**Alarm Location:** LXS-43-2, LDS-43-2

**Graphic:** Alarm Summary

**Indications:** N/A

---

**NOTE** - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

---

**Automatic Actions:**

1. Leak signal is transmitted to 242-A Evaporator.

---

**Immediate Actions:**


[3] **TROUBLESHOOT** to determine if alarm is real.

[4] **IF** alarm is due to carrier pipe failure, **FOLLOW** spill response procedure ETF-ERP-85B-003.

---

**Supplemental Actions:**

[5] **IF** alarm is due to instrument problem and a transfer through affected section of line is needed, **PERFORM** the following:

[5.1] **IF** continuous use of transfer line is occurring, **VERIFY** once per shift no transfer line leak by either of the following:

[5.1.1] **CONDUCT** visual check of sight class FG-60M-001, **OR**

OPEN 60M-43S and check for water, then **CLOSE 60M-43S.**

[5.2] **IF** intermittent use of transfer line is occurring, **VERIFY** once at the beginning and at least once during the transfer for line leaks by either of the following:

[5.2.1] **CONDUCT** visual check of sight class FG-60M-001, **OR**

OPEN 60M-43S and check for water, then **CLOSE 60M-43S.**

(Continued on Next Page)
PC-5000 ENCASEMT CATCH TK LEAK LXA-43-22

DESCRIPTION: PC-5000 Encasement Catch Tank Leak
Setpoint: On
Alarm Location: LXS-43-2, LDS-43-2
Graphic: Alarm Summary
Indications: N/A

Possible Causes:
1. Loss of electrical power.
2. Instrument malfunction.

References:
Drawings: None.
Documents: None.
# PC-5000 TRACETEK OVER/UNDERRANGE LXS-A1

**DESCRIPTION:** PC-5000 TraceTek Leak Detector Analog Signal Over-range/Under-range

**Setpoint:** On

**Alarm Location:** LDU-A1

**Graphic:** Alarm Summary

**Indications:** N/A

---

**NOTE** - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

---

**Automatic Actions:**

1. Leak signal is transmitted to 242-A Evaporator.

---

**Immediate Actions:**

1. **NOTIFY** 242-A SOM of alarm.
2. **MONITOR** leaks from LDA-43-2 (on MCS).
3. **TROUBLESHOOT** to determine if alarm is real.
4. **IF** alarm is due to carrier pipe failure, **FOLLOW** spill response procedure ETF-ERP-85B-003.

---

**Supplemental Actions:**

5. **IF** alarm is due to instrument problem and a transfer through affected section of line is needed, **PERFORM** the following:
   5.1 **IF** continuous use of transfer line is occurring, **VERIFY** once per shift no transfer line leak by either of the following:
      5.1.1 **CONDUCT** visual check of sight class FG-60M-001,
      OR
      **OPEN** 60M-43S and check for water, then **CLOSE** 60M-43S.
   5.2 **IF** intermittent use of transfer line is occurring, **VERIFY** once at the beginning and at least once during the transfer for line leaks by either of the following:
      5.2.1 **CONDUCT** visual check of sight class FG-60M-001,
      OR
      **OPEN** 60M-43S and check for water, then **CLOSE** 60M-43S.

(Continued on Next Page)
PC-5000 TRACETEK OVER/UNDERRANGE LXS-A1

DESCRIPTION: PC-5000 TraceTek Leak Detector Analog Signal Over-range/Under-range
Setpoint: On
Alarm Location: LDU-A1
Graphic: Alarm Summary
Indications: N/A

(Continued)

Possible Causes:

1. Instrument malfunction.

References:

Drawings: None.
Documents: ETF-ERP-85B-003, Emergency Spill or Release at ETF.
PC-5000 TRACETEK ZONE XX LEAK LDA-A1-XX

DESCRIPTION: PC-5000 Zone XX Leak (where XX = 01, 02, 03, 04, 05, or 06)

Setpoint: Zone XX #  Approximate mA Signal Range
01  20.16 to 22.46 mA
02  17.45 to 19.75 mA
03  14.74 to 17.04 mA
04  11.85 to 14.15 mA
05  9.26 to 11.56 mA
06  6.45 to 8.75 mA

Alarm Location: LDU-A1

Graphic: Alarm Summary

Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Automatic Actions:

1. TraceTek analog signal LDI-A1 is transmitted to 242-A Evaporator.

Immediate Actions:

[3] TROUBLESHOOT to determine if alarm is real.

(Continued on Next Page)
PC-5000 TRACETEK ZONE XX LEAK LDA-A1-XX

DESCRIPTION: PC-5000 Zone XX Leak (where XX = 01, 02, 03, 04, 05, or 06)

Setpoint:

<table>
<thead>
<tr>
<th>Zone XX #</th>
<th>Approximate mA Signal Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>20.16 to 22.46 mA</td>
</tr>
<tr>
<td>02</td>
<td>17.45 to 19.75 mA</td>
</tr>
<tr>
<td>03</td>
<td>14.74 to 17.04 mA</td>
</tr>
<tr>
<td>04</td>
<td>11.85 to 14.15 mA</td>
</tr>
<tr>
<td>05</td>
<td>9.26 to 11.56 mA</td>
</tr>
<tr>
<td>06</td>
<td>6.45 to 8.75 mA</td>
</tr>
</tbody>
</table>

Alarm Location: LDU-A1

Graphic: Alarm Summary

Indications: N/A

(Continued)

Supplemental Actions:

[5] IF alarm is due to instrument problem and a transfer through affected section of line is needed, PERFORM the following:

[5.1] IF continuous use of transfer line is occurring, VERIFY once per shift no transfer line leak by either of the following:

[5.1.1] CONDUCT visual check of sight class FG-60M-001,

OR

OPEN 60M-43S and check for water, then CLOSE 60M-43S.

[5.2] IF intermittent use of transfer line is occurring, VERIFY once at the beginning and at least once during the transfer for line leaks by either of the following:

[5.2.1] CONDUCT visual check of sight class FG-60M-001,

OR

OPEN 60M-43S and check for water, then CLOSE 60M-43S.

Possible Causes:

1. Pipe degradation resulted in failure.
2. Internal force caused failure.
3. Instrument malfunction.

(Continued on Next Page)
**PC-5000 TRACETEK ZONE XX LEAK LDA-A1-XX**

**DESCRIPTION:** PC-5000 Zone XX Leak (where XX = 01, 02, 03, 04, 05, or 06)

<table>
<thead>
<tr>
<th>Setpoint</th>
<th>Zone XX #</th>
<th>Approximate mA Signal Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>01</td>
<td>20.16 to 22.46 mA</td>
</tr>
<tr>
<td>02</td>
<td>02</td>
<td>17.45 to 19.75 mA</td>
</tr>
<tr>
<td>03</td>
<td>03</td>
<td>14.74 to 17.04 mA</td>
</tr>
<tr>
<td>04</td>
<td>04</td>
<td>11.85 to 14.15 mA</td>
</tr>
<tr>
<td>05</td>
<td>05</td>
<td>9.26 to 11.56 mA</td>
</tr>
<tr>
<td>06</td>
<td>06</td>
<td>6.45 to 8.75 mA</td>
</tr>
</tbody>
</table>

**Alarm Location:** LDU-A1

**Graphic:** Alarm Summary

**Indications:** N/A

(Continued)

**References:**

- **Drawings:** None.
- **Documents:** ETF-ERP-85B-003, Emergency Spill or Release at ETF.
PC-5000 TRACETEK FAULT LXA-A1

DESCRIPTION: PC-5000 TraceTek Leak Detection Unit Fault
Setpoint: Less than or equal to 3.5 mA
Alarm Location: LDU-A1
Graphic: Alarm Summary
Indications: N/A

NOTE - Alarm response procedures are not designed for, nor intended to be applied to, “expected” alarms generated by approved maintenance or testing procedures.

Automatic Actions:
1. TraceTek analog signal LDI-A1 is transmitted to 242-A Evaporator.

Immediate Actions:
[1] COMPARE LDI_A1 on graphic LERF MAIN to value table below to determine cause of the fault:

<table>
<thead>
<tr>
<th>LDI_A1 Value</th>
<th>Interpreted As</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 mA</td>
<td>Loss of power to LDU-A1</td>
</tr>
<tr>
<td>Less than or equal to 2.9 mA</td>
<td>TraceTek Cable break</td>
</tr>
<tr>
<td>Less than or equal to 3.9 mA</td>
<td>TraceTek Cable/Loop imbalance, service required</td>
</tr>
<tr>
<td>Less than or equal to 4.4 mA</td>
<td>Service required</td>
</tr>
</tbody>
</table>

[4] TROUBLESHOOT to determine if alarm is real.

(Continued on Next Page)
PC-5000 TraceTek Fault LXA-A1

DESCRIPTION: PC-5000 TraceTek Leak Detection Unit Fault
Setpoint: Less than or equal to 3.5 mA
Alarm Location: LDU-A1
Graphic: Alarm Summary
Indications: N/A

(Continued)

Supplemental Actions:
[5] IF alarm is due to instrument problem and a transfer through affected section of line is needed, PERFORM the following:
  [5.1] IF continuous use of transfer line is occurring, VERIFY once per shift no transfer line leak by either of the following:
    [5.1.1] CONDUCT visual check of sight class FG-60M-001,
    OR
    OPEN 60M-43S and check for water, then CLOSE 60M-43S.
  [5.2] IF intermittent use of transfer line is occurring, VERIFY once at the beginning and at least once during the transfer for line leaks by either of the following:
    [5.2.1] CONDUCT visual check of sight class FG-60M-001,
    OR
    OPEN 60M-43S and check for water, then CLOSE 60M-43S.

Possible Causes:
1. Instrument malfunction.

References:
Drawings: None.
Documents: None.